REMARKS

U.S. Patent 170,314 to Toedt Fails to Anticipate or Render Obvious the Claimed Invention

The Office Action rejects the claims under 35 U.S.C. § 102 and 35 U.S.C. § 103. Both rejections are based almost exclusively on U.S. Patent 170,314 to Toedt. The Office's reliance upon Toedt is misplaced and the rejections are untenable because Toedt, like the references that preceded it, fails to disclose or suggest all of the elements of the claimed invention.

The primary error made by the Office in its analysis of Toedt is stating that Toedt "forms a continuous cylinder with the knuckles in a resting position (see Fig. 2)." Office Action, ¶ 2. Although Toedt's Figure 2 shows continuous contact between two oblique surfaces, Figure 2 only shows one side of the hinge.

Figure 1 of Toedt shows a complete view of the top knuckle of Toedt's hinge. As Figure 1 clearly documents, the surface of the top knuckle that contacts the lower knuckle is not oblique across its entire cross-section. It appears that about ¾ of the surface is perpendicular to the knuckle's vertical axis. In fact, the only portion of the surface that appears to be oblique is the small area that represents the extreme backside of the hinge (*i.e.*, the portion of the upper knuckle cylinder that is furthest away from flap A). Therefore, a gap, identified as "G" on the accompanying copy of Toedt Figure 1, exists between the upper knuckle and the lower knuckle when the hinge is open and when the hinge is at rest. In other words, when the Toedt hinge is at rest the knuckles cannot form the continuous cylinder recited in the claims.

The above stated distinction is not inconsequential. Because the Toedt hinge has the gap "G", there is a moment of inertia or torque centered on that gap. The claimed hinge does not have a gap and thus distributes downward forces across the entire face of the lower knuckle oblique surface.

As an analogy to the improvement shown by the claimed invention, consider two tall oak trees. A lumberjack is chopping down the first tree with an ax. To chop down the tree he uses the ax to chop out a V-shaped notch on one side of the tree. Once the V-notch is about half-way through the tree very little, if any, force is needed for the tree to fall to the side of the tree with the notch. The V-notch in the tree is same thing as the gap "G" shown in Fig. 1. Even when the knuckles are at rest that gap will be there and there will be a torque centered on that gap. The only resistance to that torque is spindle B. Eventually the torque will either wear down the interior cylindrical void of the upper knuckle and/or bend the spindle. Either occurrence will cause the hinge to wobble or even fail.

In contrast, the abutting surfaces of the knuckles of the claimed invention are like the second, untouched tree. The abutting surfaces are oblique across their entire surfaces and are therefore in continuous contact about the circumferences of the knuckles when at rest. Therefore, downward forces are distributed evenly around the entire upper surface of the lower knuckle and there is little or no torque generated at the junction of the two knuckles. This creates a more stable, longer lasting hinge. Claims 1, 17 and 33 have been amended to more clearly recite this benefit of the claimed invention.

With respect to the Office's reliance upon U.S. Patent 3,733,650 to Douglas and U.S. Patent 3,862,470 to Swank, both are cited primarily as providing sleeved bearings. Applicant notes that the sleeved bearing of Douglas and Swank cannot be used with hinge knuckles having abutting oblique surfaces and are therefore insufficient references. Applicant's previous arguments related to Swank are equally applicable here and Applicant simply incorporates them by reference.

And finally, Applicant respectfully disagrees with the Office's characterization of the built-in bearing (element C) discussed in Toedt. The Office states that "it is inherent that the hard metal bushing has a lower coefficient of friction than the knuckle surfaces." Office Action, ¶ 2. Toedt says nothing about coefficients of friction and only describes the bushing as a washer of "hard metal". If the "hard metal" is the same as the metal of the knuckles the coefficient of friction between all the parts could be the same. Alternatively,

the coefficient of friction of the washer could be greater than the knuckles if the downward force on the upper knuckle were sufficient to overcome the resistance (e.g., friction) created by the washer.

In light of above amendments and arguments Applicant respectfully asserts that the Office's rejections are no longer applicable. Applicant respectfully asserts that the claims are in condition for immediate allowance and should proceed to allowance forthwith.

Respectfully submitted,

Stanley B. Baker
Reg. No. 35,058

021176
Summa & Allan, P.A.
11610 North Community House Road
Suite 200
Charlotte, NC 28277-2162
Phone: 704-945-6700
Fax: 704-945-6735

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being transmitted by facsimile to the Assistant Commissioner for Patents to the attention of Examiner Alison K. Pickard at Fax No. 703-872-9327 April 8, 2003.

4-8-03
Date

Andie Crumpler
Andie Crumpler

S:\FIRM DOCS\1246\1\Response040703.doc